

### REMARKS

The Office Action, mailed November 16, 2007, has been received and its contents carefully noted. The then pending active claims, claims 1, 3-9, 11 and 14-24, were rejected. By this Response, claims 1, 3-9, 11, 14-19, 22 and 24 have been amended, claims 10, 13, 20 and 23 are canceled, and claim 25 has been added. Support may be found in the specification and the claims as originally filed. In particular, new claim 25 is supported by former claim 13. No statutory new matter has been added. Therefore, reconsideration and entry of the claims, as amended, are respectfully requested.

#### **Rejection under 35 U.S.C. 102(b)**

The Examiner rejected claims 1, 6, 8 and 9 under 35 U.S.C. 102(b) as being anticipated by Nakano (US 20030056901).

Applicants respectfully submit that their processing system is arranged as specified in amended claim 1, and amended claim 11, as follows:

- (1) The high-frequency electric power supplying part is arranged in the enclosed space disposed within the tubular supporting part, below the first electrode.
- (2) The high-frequency electric power supplying part comprises: a first high-frequency electric power source unit that outputs first high-frequency electric power having a first frequency; a first matching unit for impedance matching of the first high-frequency electric power; a second matching unit for impedance matching of the second high-frequency electric power; and a transmission line that transmits the first high-frequency electric power from the first high-frequency electric power source unit to the first matching unit.

Nanko does not teach or suggest the claimed arrangement. Specifically, Nanko does not teach or suggest an enclosed space formed, in part, by a tubular supporting part and the bottom of a second electrode, which space contains a high-frequency electric power source supplying part that itself includes a first high-frequency electric power source unit, a first matching unit, a second matching unit, and a transmission line. Shaft 13 of Nanko is noted and may provide high-frequency electric power from matching box 26. However such shaft does not contain a first

high-frequency electric power source unit, a first mating unit a second matching unit and a transmission line as does the Applicants' structure. Thus, shaft 13 of Nanko can not suggest the high-frequency electric power supplying part arrangement of the claimed invention. Nowhere does Nanko teach or suggest providing (1) a high-frequency electric power source supplying part, (2) a first high-frequency electric power source unit, (3) a first matching unit, a second matching unit, and (3) a transmission line in an enclosed space as Applicants describe.

Therefore, Applicants respectfully urge that the claims, as amended, are novel and the rejection under 35 U.S.C. 102(b) should be withdrawn.

#### **Rejection under 35 U.S.C. 103(a)**

The Examiner rejected claims 3, 11 and 17 under 35 U.S.C. 103(a) as being unpatentable over Nakano in view of Zhao (US 5,643,364). The Examiner rejected claims 4, 5 and 19 under as being unpatentable over Nakano in view of Goodman (US 6,887,339 ) and Reyzelman (US 6,703,080). The Examiner rejected claim 7 as being unpatentable over Nakano in view of Reyzelman. The Examiner rejected claim 18 as being unpatentable over Nakano in view of Zhao and further in view of Reyzelman. The Examiner rejected claims 14-16 and 22 as being unpatentable over Nakano in view of Zhao and further in view of Goodman and Reyzelman. The Examiner rejected claim 20 as being unpatentable over Nakano in view of Suemasa (US 6,089,181). The Examiner rejected claim 23 as being unpatentable over Nakano in view of Zhao and further in view of Suemasa. The Examiner rejected claim 21 as being unpatentable over Nakano in view of Suemasa and further in view of Fischer (US 6,242,360). The Examiner rejected claim 24 as being unpatentable over Nakano in view of Zhao and further in view of Suemasa and further in view of Fischer.

Applicants respectfully submit that none of Zhao, Goodman, Reyzelman, Suemasa, and Fischer, alone or in combination, alleviates the deficiencies of Nakano. Specifically, nowhere do these documents teach or suggest Applicants arrangement of (1) a high-frequency electric power supplying part in an enclosed space disposed within a tubular supporting part below a first electrode, and (2) a high-frequency electric power supplying part comprising: a first high-frequency electric power source unit that outputs a first high-frequency electric power having a

first frequency; a first matching unit for impedance matching of the first high-frequency electric power; a second matching unit for impedance matching of the second high-frequency electric power; and a transmission line that transmits the first high-frequency electric power from the first high-frequency electric power source unit to the first matching unit.

Because of the present arrangement of features (1) and (2), it is unnecessary for Applicants to dispose the first high-frequency electric power source unit and/or the first matching unit around the plasma processing system. Thus, Applicants have achieved critical reduction of the "foot-print" (required floor area) of a plasma processing system. Moreover, the second matching unit also is disposed in the enclosed space. This further contributes to the reduction of the "foot-print". On the other hand, both the first high-frequency electric power and the second high-frequency electric power are applied to the first electrode so as to improve controllability of the plasma process. Nowhere do the cited art, alone or in combination, teach or suggest how to dispose a second matching unit. Further still, because of the combination of the above features (1) and (2), the length of the transmission line can be shortened considerably, compared with conventional structures. Line shortening in turn prevents resonance of second or third harmonic waves to prevent changes in characteristics of plasma distribution, and to guarantee duplicability and reliability in the process.

The applied art simply does not teach or suggest arrangement features (1) and (2). Since the cited art does not teach or suggest features (1) and (2) of the claimed invention, the present invention is unobvious.

Therefore, Applicants respectfully urge that the claims, as amended, are unobvious and the several rejections under 35 U.S.C. 103(a) should be withdrawn.

#### **Request for Interview**

Applicants respectfully request either a telephonic or an in-person interview should there be any remaining issues.

### CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Therefore, it is respectfully requested that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

It is not believed that extensions of time are required, beyond those that may otherwise be provided for in accompanying documents. However, in the event that additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. 1.136(a), and any fees required therefore are hereby authorized to be charged to **Deposit Account No. 02-4300, Attorney Docket No. 033082M194.**

Respectfully submitted,  
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